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IMAGING AND DIAGNOSTIC TESTING

COMPARISON OF ABILITY STRESS TESTS TO ACCURATELY PREDICT SPECIFIC AREAS OF ISCHEMIA

ACC Poster Contributions
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Background The sensitivity and specificity of different Stress Tests (ST) in predicting specific areas of ischemia have not been adequately studied. We aimed to compare the sensitivity and specificity of Stress Nuclear Imaging, Stress Echocardiography and Stress Positron Emission Tomography scan (PET) in predicting ischemia to the specific areas supplied by the Left Anterior Descending (LAD), Right Coronary Artery (RCA) and Lateral Circumflex Artery (LCX)

Methods 2268 true positive and true negative ST were identified in obese patients with body mass index(BMI)>=30, from 1999 to 2007 by confirmation with cardiac catheterizations done within 1 year after the index ST .We compared areas of abnormalities in the ST with areas of abnormalities in the subsequent cardiac catheterizations with a positive test confirmed by either a >70% stenosis or a stent placement in the subsequent catheterizations. A standardized classification to categorize the stress test results to areas supplied by the LAD, LCX and RCA was used. Sensitivity and specificity values were generated from frequency counts of 2x2 tables using SAS version 9.2 software.

Results See Table.

CORONARY AREA OF ISCHEMIA	SENSITIVITY	SPECIFICITY	POSITIVE PREDICTIVE VALUE	NEGATIVE PREDICTIVE VALUE
ECHO				
LAD	.70	.55	.41	.81
LCX	.25	.70	.23	.73
RCA	.43	.66	.29	.78
NUCLEAR IMAGING				
LAD	.76	.70	.50	.88
LCX	.60	.78	.54	.82
RCA	.62	.67	.41	.82
PET				
LAD	.83	.59	.54	.86
LCX	.57	.61	.55	.62
RCA	.60	.53	.40	.72

The results of sensitivity and specificity remained fairly consistent across all obesity BMI groups and in patients with and without prior CABG

Conclusion All three ST modalities showed the highest sensitivity in predicting LAD lesions and the least sensitivity in predicting LCX lesions. Nuclear Imaging had the best combination of specificity and sensitivity